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10/811,019

03/26/2004

Ken VanBree

9573

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EXAMINER
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CUTLER, ALBERT H

ART UNIT	PAPER NUMBER
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2622

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/811,019

Applicant(s)

VANBREE, KEN

Examiner

Albert H. Cutler

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is responsive to application 10/811,019 filed on March 26, 2004. Claims 1-12 are pending in the application and have been examined by the examiner.

#### ***Information Disclosure Statement***

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, and 6-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Verghese(US Patent 7,038,709).

Consider claim 1, Verghese teaches:

An imaging system(figures 1-3) to reposition an image capture device(Camera, 16) in a position relative to a subject of interest as that of a reference image of the subject of interest, comprising:

- an image capture device(camera, 16);

- a position apparatus(figure 2) on which the image capture device(16) is mounted(see figure 3a), operable to orient the image capture device relative to a subject of interest(See column 5, lines 31-45. The position apparatus orients the image capture device in order to track the motion of the subject of interest.);

- a reference image of the subject of interest(See figure 12, step 508, column 18, lines 8-25. A reference image is obtained to determine current camera orientation.);

- a computational device(44, figure 1) coupled to the position apparatus(figure 1), such computational device(44) capable of receiving images from the image capture device(16) and of receiving the reference image(column 5, lines 56-67), performing a comparison(The image processing component(44) receives an image, determines the location of a certain color using a color tracking algorithm, centers that location on the camera field of view, compares subsequent frames to determine if the position of the predetermined color has moved from the center, and repositions the imaging device so that the predetermined color is re-centered. See column 5, line 56 through column 7, line 12, figure 12, column 17, line 8 through column 19, line 6.), and communicating position adjustments to reposition the image capture device(column 6, lines 37-55).

Art Unit: 2622

Consider claim 2, and as applied to claim 1 above, Verghese further teaches:

the communication of position adjustments is via signals to the positional apparatus from the computational device(The image processing component(44) determines subject locations in the image, and then motor control interface(46) controls the adjustment(i.e. provides signals to) of the positional apparatus(figures 2 and 3) based on the subject location in the image. See column 6, line 29 through column 7, line 12.).

Consider claim 3, and as applied to claim 1 above, Verghese further teaches:

the communication of position adjustments is by means of positional adjustment data conveyed by means of a user interface(column 5, lines 47-55, column 7, lines 24-35).

Consider claim 4, Verghese teaches:

A method for repositioning an image capture device(16) relative to a subject of interest(figure 12) comprising the steps of:

a) initializing an imaging system(figures 1-3), wherein initializing includes the steps of

a. 1) obtaining a reference image of the subject of interest(See figure 12, step 508, column 18, lines 8-25. A reference image is obtained to determine current camera orientation.);

a. 2) repositioning an image capture device(16) relative to the subject of interest(Step 520, figure 12, column 6, line 29 through column 7, line 12, column 18, line 47 through column 19, line 6);

b) imaging the subject of interest(Step 508, figure 12. The same method of determining the location of a subject of interest in an image and repositioning the camera accordingly is repeated continuously to maintain camera position/subject position correspondence. See column 5, lines 31-67.);

c) computing the difference between the reference image of the subject of interest and the image capture device image(The image processing component(44) receives an image, determines the location of a certain color using a color tracking algorithm, centers that location on the camera field of view, compares subsequent frames to determine if the position of the predetermined color has moved from the center, and repositions the imaging device so that the predetermined color is re-centered. See column 5, line 56 through column 7, line 12, figure 12, column 17, line 8 through column 19, line 6.);

d) refining the position of the image capture device so that the image capture device is in the same position relative to the subject of interest as that position from which the reference image was obtained(The image capture devices centers a subject in the camera's field of view, takes continuous images(column 5, lines 60-64), and when the position of the subject moves from the center, the positioning devices enables the camera to re-center the subject(i.e. moves the camera to the same position relative to the subject of interest as that position from previous centered frames). See step 520,

figure 12, column 6, line 18 through column 7, line 12, column 18, line 47 through column 19, line 8.).

Consider claim 6, and as applied to claim 4 above, Verghese further teaches:

the reference image is obtained after fixed reference points have been selected in the subject of interest(Fixed reference points corresponding to areas associated with specific colors are obtained by the image processing component(column 6, lines 1-28), and then images are taken, and the reference points are used by the positioning device to reposition the camera so that the reference points are centered, column 6, line 29 through column 7, line 12.).

Consider claim 7, and as applied to claim 4 above, Verghese further teaches:

the step of initializing includes extracting reference points from more than one image of the subject of interest representing more than one camera center(Many images are obtained(column 5, lines 56-67), which images contain the same reference points, and these images contain more than one camera center as the camera is repositioned by the positioning device to re-center the reference points in the varying images, column 6, line 1 through column 7, line 12).

Consider claim 8, and as applied to claim 4 above, Verghese further teaches:

time has elapsed between the initialization process and the repositioning of the image capture device(Images are captured and then(i.e. time has elapsed) the camera is repositioned. See figure12.).

Consider claim 9, and as applied to claim 4 above, Verghese further teaches:  
the computation of position is communicated to an automatic position correction apparatus(The image processing component(44) determines subject locations in the image, and then motor control interface(46) controls the adjustment(i.e. performs automatic adjustment) of the positional apparatus(figures 2 and 3) based on the subject location in the image. See column 6, line 29 through column 7, line 12.).

Consider claim 10, and as applied to claim 4 above, Verghese further teaches:  
the computation of position is communicated to the user through an interface(column 5, lines 47-55, column 7, lines 24-35).

Consider claim 11 Verghese teaches:  
An apparatus(figures 2 and 3) for positioning an imaging device(16) and adapted for operably coupling to an image capture device(see figure 3a) and where such apparatus is capable of positioning said image capture device(column 5, lines 30 through column 7, line 12), such that the positioning of the image capture device is controllable and said apparatus is operable to orient the image capture device relative to a subject of interest(column 5, lines 30 through column 7, line 12).



Consider claim 12, and as applied to claim 11 above, Verghese further teaches that the positioning of the image capture device is automated(The image processing component(44) determines subject locations in the image, and then motor control interface(46) controls the adjustment(i.e. performs automatic adjustment) of the positional apparatus(figures 2 and 3) based on the subject location in the image. See column 6, line 29 through column 7, line 12.).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Verghese in view of Palm(US Patent 5,699,444).

Consider claim 5, Verghese teaches of using color recognition algorithms to reposition an imaging device(column 6, lines 1-28). However, Verghese does not explicitly teach of generating a three-dimensional model of the subject of interest through selection of reference points in the subject of interest.

However, as indicated by Palm, the repositioning of a camera using a three-dimensional model is well known in the art. Palm is similar to Verghese in that Palm is also concerned with repositioning a camera to re-center a subject of interest(column 1, lines 6-10, column 7, lines 26-39).

In addition to the teachings of Verghese, Palm teaches of using three-dimensional coordinates of reference points, and thereby using three-dimensional models to reposition and re-center a subject in relation to a camera. See figures 8 and 9, column 12, lines 21-48, column 15, lines 18-53.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use three-dimensional models to reposition an imaging system as taught by Palm in place of the color-tracking algorithms taught by Verghese for the benefit of providing simple, yet accurate procedures that can be applied successfully by non-technical personnel(Palm, column 4, lines 39-52).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

Art Unit: 2622

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC



NGOC-YEN VU  
SUPERVISORY PATENT EXAMINER